IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Applicant	:	Hannel	
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Examiner	:	Benoit, Esther	
Docket No.	:	I004-P03079US	
Customer No.	:	33356	

APPEAL BRIEF UNDER 37 C.F.R. § 41.37

Dear Sir:

The following Appeal Brief is submitted is response to the Final Office Action mailed 2/17/2011. A Notice of Appeal was filed concurrently with this Brief.

(i) REAL PARTY IN INTEREST

The real party in interest is Ixia.

(ii) RELATED APPEALS AND INTERFERENCES

There are no applications currently being appealed that may directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(iii) STATUS OF CLAIMS

Claims 1-4, 6-21, 23-35, and 37-45 were pending and rejected in the final Office action dated 2/17/2011. Claims 5, 22, and 36 were previously cancelled. Claims 1-4, 6-21, 23-35, and 37-45 are the subject of this appeal.

(iv) STATUS OF AMENDMENTS

No amendments were filed after the final Office action dated 2/17/2011.

(v) SUMMARY OF CLAIMED SUBJECT MATTER

Independent Claim 1:

A method (F3) of testing real-world performance of a system under test (F1/106) coupled to a communications network, the method comprising: coupling a device (F1/102) to the communications network, the device comprising a chassis and one or more adapter cards (0038), the adapter cards comprising hardware and software (F1/102, 0033); the device setting up for simulation of a realistic mix of network traffic on the communications network (F3/310, 0030, 0041, 0042); the device simulating the realistic mix of network traffic on the communications network (F3/320, 0033, 0043); the device setting up for engaging in stateful TCP connections with the system under test (F3/310, 0041, 0042); the device engaging in stateful TCP connections with the system under test (F3/320, 0043) concurrently with the step of simulating

the realistic mix of network traffic on the communications network, resulting in additional network traffic on the communications network; and the device measuring performance of the system under test for the stateful TCP connections under load of the simulated network traffic from the device (F3/330, 0043).

Independent Claim 15:

An apparatus (F1/100, 0024) for testing real-world performance of a system under test (F1/106) coupled to a communications network, the apparatus comprising: a chassis (0038); and one or more adapter cards (F1/102, 0038) disposed in the chassis, the adapter cards comprising hardware and software (F1/102, 0033), the hardware and software for: setting up for simulation of a realistic mix of network traffic on the communications network (F1/110, F3/310, 0027-0030, 0041, 0042); simulating the realistic mix of network traffic on the communications network (F1/110, F3/320, 0027-0030, 0033, 0043); setting up for engaging in stateful TCP connections with the system under test (F3/310, 0041, 0042); engaging in stateful TCP connections with the system under test concurrently with simulating the realistic mix of network traffic on the communications network resulting in additional network traffic on the communications network (F3/320, 0043); and measuring performance of the system under test for the stateful TCP connections under load of the simulated network traffic (F3/330, 0026, 0043).

Independent Claim 21

An apparatus (F1/100, 0024) for testing real-world performance of a system under test (F1/106) coupled to a communications network, the apparatus comprising: a chassis (0038) and one or more cards disposed in the chassis (F1/102, 0038), the adapter cards comprising: a programmable stateless packet processor (F1/110, 0027-0030) to simulate a realistic mix of network traffic on the communications network, a processor (F2/200) executing a TCP application (F1/108, F1/118, 0026, 0032) for engaging in stateful TCP connections with the system under test concurrently with simulating the realistic mix of network traffic on the communications network, resulting in additional network traffic on the communications network,

and means for measuring performance metrics of the system under test for the stateful TCP connections under load of the simulated realistic mix of network traffic (F1/108, F1/114, 0030).

Independent Claim 27

An enterprise load system (F1/100, 0024) for testing a system under test (F1/106) available on a communications network, the enterprise load system comprising: first means for simulating real-world network traffic on the communications network F3/310, F3/320, 0027-0030, 0041, 0042); second means for generating stateful TCP connections across the communications network with the system under test F3/310, F3/320, 0026, 0032, 0041, 0042), each interactive transaction including receiving at least one packet from the system under test and sending at least one response packet in response to the received packet (F5, 0012); third means for measuring performance of the system under test in supporting the stateful TCP connections from the second means in the presence of the simulated traffic on the communication network from the first means (F1/108, F1/114, 0026,0030); and a controller (F1/112, 0030) coupled to the first means, the controller for changing quantity and quality of the network traffic simulated by the first means (F3/340, 0030, 0044), wherein the first means, the second means and the third means operate concurrently.

Independent Claim 35

A method (F3) of testing a system under test available on a communications network, the method comprising: simulating real-world network traffic on the communications network (F3/320, 0027-0030, 0043); generating stateful TCP connections across the communications network with the system under test (F3/310, F3-320, 0042, 0043); measuring performance metrics of the system under test in supporting the stateful TCP connections in the presence of the simulated real-world network traffic (F3/330, 0030, 0043); and changing quantity and quality of the simulated real-world network traffic (F3/340, 0030, 0044), wherein the steps of simulating, generating and measuring are performed concurrently.

(vi) GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Whether claims 1-4 and 6-20 are unpatentable under 35 U.S.C. 102(e) as being anticipated by *Van Gerrevink* (Published Patent Application US 2003/0012141 A1). Claims 2-4 and 6-20 stand or fall with independent claim 1.

Whether claims 21 and 22-26 are unpatentable under 35 U.S.C. 102(e) as being anticipated by *Van Gerrevink* (Published Patent Application US 2003/0012141 A1). Claims 23-26 stand or fall with independent claim 21.

Whether claims 35 and 37-45 are unpatentable under 35 U.S.C. 102(e) as being anticipated by *Van Gerrevink* (Published Patent Application US 2003/0012141 A1). Claims 37-45 stand or fall with independent claim 35.

Whether claims 27-34 are unpatentable under 35 U.S.C. 103(a) over *Van Gerrevink* in view of *Beanland* (U.S. Patent No. 6,028,847). Claims 28-34 stand or fall with independent claim 27.

(vii) ARGUMENT

Claims 1-4 and 6-20:

Independent claim 1 states rejected as anticipated by *Van Gerrevink* (Published Patent Application US 2003/0012141 A1). Independent claim 1 reads as follows:

> 1. A method of testing real-world performance of a system under test coupled to a communications network, the method comprising
>
> coupling a device to the communications network, the device comprising a chassis and one or more adapter cards, the adapter cards comprising hardware and software
>
> the device setting up for simulation of a realistic mix of network traffic on the communications network

> the device simulating the realistic mix of network traffic on the communications network
>
> the device setting up for engaging in stateful TCP connections with the system under test
>
> the device engaging in stateful TCP connections with the system under test concurrently with the step of simulating the realistic mix of network traffic on the communications network, resulting in additional network traffic on the communications network
>
> the device measuring performance of the system under test for the stateful TCP connections under load of the simulated network traffic from the device.

The fundamental principles of claim rejections under 35 USC § 102 are stated in MPEP §2131 as follows:

> "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California,* 814 F.2d 628, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).
>
> "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

It is respectfully submitted that the rejection of claim 1 is in error because *Van Gerrevink* fail to expressly or inherently describe each and every element of the claim. Specifically, claim 1 recites the claimed method includes engaging in stateful TCP connections with a system under test concurrently with simulating a realistic mix of network traffic, and measuring the performance of the system under test for the stateful TCP connections under load of the simulated network traffic. Since these elements are not disclosed by *Van Gerrevink*, it is respectfully submitted that this rejection should be withdrawn.

A. *Van Gerrevink* does not disclose engaging in stateful TCP connections with the system under test concurrently with simulating a realistic mix of network traffic.

Van Gerrevink describes a traffic stream generator to generate a traffic stream that simulates a realistic mix of network traffic. The traffic stream can include a variety of traffic classes, or packet types. Additionally, addresses and other fields within generated packets can be varied. *Van Gerrevink* is an example of a prior art traffic generator as described in paragraph 0011 of the application. The traffic stream generator of *Van Gerrevink* may be suitable for "simulating the realistic mix of network traffic" as recited in claim 1. However, *Van Gerrevink* does not expressly disclose the traffic stream generator engaging in stateful TCP connections. Further, *Van Gerrevink* does not describe or even suggest that the traffic generator has the capability of receiving packets and creating new packets in response to received packets, both of which are necessary capabilities to engage in stateful TCP transactions.

In a response to Applicant's previous argument in the final Office action, the Examiner notes that *Van Gerrevink* discloses [0062] that the traffic generator may send TCP data and TCP acknowledgement packets to equipment under test. The Examiner further asserts that "TCP connections (to send TCP packets) are known to maintain status information for packet transmission, and thus, allowing for a stateful connection". Thus the Examiner apparently believes that the traffic generator of *Van Gerrevink inherently* engages in stateful TCP connections. The Applicant respectfully disagrees. Merely sending TCP data and acknowledgement packets is not the same as engaging in stateful TCP connections. Engaging in stateful TCP connections additionally requires receiving TCP packets from the equipment under test, determining and storing information on the state of the connection in a state memory, and generating new TCP packets based on received TCP packets and the stored state information. None of these additional elements are disclosed by *Van Gerrevink*, nor are any of these elements inherently required for the apparatus of *Van Gerrevink* to fulfill its function as a traffic generator.

B. *Van Gerrevink* and *Beanland* do not disclose measuring performance of the system under test for the stateful TCP connections under load of the simulated network traffic from the device.

The office action relies on *Van Gerrevink* to teach measuring performance of a system under test at paragraphs 0037, 0067, and 0075. Paragraph 0037 describes that the traffic emulator generates traffic that is conveyed to equipment under test. Paragraph 0067 describes that the generated traffic may simulate realistic Internet traffic. Paragraphs 0073-0076 describe the test system shown in figure 6, which includes a tester PC 610 executing "test session" software 670 that apparently controls a plurality of test modules 680. Presumably, a multiple stream traffic emulator is contained within at least some of the test modules 680. Paragraphs 0078-0081 describe how the test system can be used to conduct a variety of tests.

Van Gerrevink's entire description of measuring performance of a system under test is a single sentence in paragraph 0075, as follows:

> The test modules 680 include ports 684 for making real-time measurements and for passing results back to the test session.

Clearly, *Van Gerrevink*'s disclosure of "ports for making real-time measurements" falls far short of disclosing "measuring performance of the system under test for the stateful TCP connections under load of the simulated network traffic" in as complete detail as recited in claim 1, as required by *Richardson v. Suzuki Motor Co.*

C. Conclusion

With all due respect, it is submitted that the rejection of claim 1 is based on impermissible hindsight-driven presumption. *Van Gerrevink* only discloses sending TCP packets, which the Examiner presumes to mean that *Van Gerrevink* engages in stateful TCP connections. Similarly, *Van Gerrevink* only discloses "making real-time measurements", which the Examiner presumes to mean that *Van Gerrevink* measures the performance of a system under test for (nonexistent) stateful TCP connections overlaid on the realistic network traffic.

Since, in the absence of hindsight, *Van Gerrevink* fails to expressly or inherently describe at least two elements of independent claim 1, it is respectfully submitted that claims 1-4 and 6-20 are allowable. Withdrawal of the rejection is solicited.

Claims 21 and 23-26:

Independent claim 21 stands rejected as anticipated by *Van Gerrevink*. Independent claim 21 reads as follows:

> 21. An apparatus for testing real-world performance of a system under test coupled to a communications network, the apparatus comprising
>
> a chassis
>
> one or more cards disposed in the chassis, the adapter cards comprising
>
> a programmable stateless packet processor to simulate a realistic mix of network traffic on the communications network
>
> a processor executing a TCP application for engaging in stateful TCP connections with the system under test concurrently with simulating the realistic mix of network traffic on the communications network, resulting in additional network traffic on the communications network
>
> means for measuring performance metrics of the system under test for the stateful TCP connections under load of the simulated realistic mix of network traffic.

It is respectfully submitted that the rejection of claim 21 is in error because *Van Gerrevink* fail to expressly or inherently describe each and every element of the claim. Specifically, claim 21 recites a processor executing a TCP application engaging in stateful TCP connections with a system under test concurrently with simulating a realistic mix of network traffic, and means for measuring the performance of the system under test for the stateful TCP connections under load of the simulated network traffic. Since these elements are not disclosed by *Van Gerrevink*, it is respectfully submitted that this rejection should be withdrawn.

The arguments traversing the rejection of claim 21 are essentially the same as the arguments traversing the rejection of claim 1. These arguments will be summarized but not repeated. *Van Gerrevink* only discloses sending TCP packets, but does not disclose that the traffic generator engages in stateful TCP connections as recited in claim 21. Similarly, *Van Gerrevink* only discloses "making real-time measurements", which falls far short of disclosing that the traffic generator measures the performance of a system under test for (nonexistent) stateful TCP connections overlaid on the realistic network traffic, as recited in claim 21.

Since *Van Gerrevink* fails to expressly or inherently describe at least two elements of independent claim 21, it is respectfully submitted that claim 21 and depending claims 23-26 are allowable. Withdrawal of the rejection is solicited.

Claims 35 and 37-45:

Independent claim 35 stands rejected as anticipated by *Van Gerrevink* (Published Patent Application US 2003/0012141 A1). Independent claim 35 reads as follows:

> 35. A method of testing a system under test available on a communications network, the method comprising:
>
> simulating real-world network traffic on the communications network
>
> generating stateful TCP connections across the communications network with the system under test
>
> measuring performance metrics of the system under test in supporting the stateful TCP connections in the presence of the simulated real-world network traffic
>
> changing quantity and quality of the simulated real-world network traffic
>
> wherein the steps of simulating, generating and measuring are performed concurrently.

It is respectfully submitted that the rejection of claim 35 is in error because *Van Gerrevink* fail to expressly or inherently describe each and every element of the claim. Specifically, claim 35

recites generating stateful TCP connections across a communications network with a system under test, and measuring performance metrics of the system under test in supporting the stateful TCP connections in the presence of the simulated real-world network traffic. Since these elements are not disclosed by *Van Gerrevink*, it is respectfully submitted that this rejection should be withdrawn.

The arguments traversing the rejection of claim 35 are essentially the same as the arguments traversing the rejection of claim 1. These arguments will be summarized but not repeated. *Van Gerrevink* only discloses sending TCP packets, but does not disclose generating stateful TCP connections with a system under test as recited in claim 35. Similarly, *Van Gerrevink* only discloses "making real-time measurements", which falls far short of disclosing measuring performance metrics of the system under test in supporting the stateful TCP connections in the presence of the simulated real-world network traffic, as recited in claim 35.

Since *Van Gerrevink* fails to expressly or inherently describe at least two elements of independent claim 35, it is respectfully submitted that claim 35 and depending claims 37-45 are allowable. Withdrawal of the rejection is solicited.

Claims 27-24:

Independent claim 27 stands rejected under 35 U.S.C. 103(a) over *Van Gerrevink* in view of *Beanland* (U.S. Patent No. 6,028,847). Independent claim 27 reads as follows:

> 27. An enterprise load system for testing a system under test available on a communications network, the enterprise load system comprising:
>
> first means for simulating real-world network traffic on the communications network
>
> second means for generating stateful TCP connections across the communications network with the system under test, each interactive transaction including receiving at least one packet from the system under test and sending at least one response packet in response to the received packet

> third means for measuring performance of the system under test in supporting the stateful TCP connections from the second means in the presence of the simulated traffic on the communication network from the first means
>
> a controller coupled to the first means, the controller for changing quantity and quality of the network traffic simulated by the first means
>
> wherein the first means, the second means and the third means operate concurrently.

In *KSR International Co. v. Teleflex Inc. (KSR),* 550 U.S. 398, 127 S. Ct. 1727 (2007), the Supreme Court reiterated that claim rejections under 35 USC § 103 must be based on the analysis originally defined in *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 148 USPQ 459 (1966). This analysis is objective:

> Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background the obviousness or nonobviousness of the subject matter is to be determined. (148 USPQ at 467)

The analysis required by *Graham* is discussed as length in MPEP 2141.

The rejection of independent claim 27 is respectfully traversed on the grounds that the Office action misinterprets the scope and content of the cited prior art and thus fails to properly ascertain the differences between the prior art and the claimed subject matter. Specifically, claim 27 recites "second means for generating stateful TCP connections across the communications network with the system under test, each interactive transaction including receiving at least one packet from the system under test and sending at least one response packet in response to the received packet" and "third means for measuring performance of the system under test in supporting the stateful TCP connections from the second means in the presence of the simulated traffic on the communication network from the first means" and "a controller coupled to the first means, the controller for changing quantity and quality of the network traffic simulated by the first

means". Since these elements are not found in *Van Gerrevink* and *Beanland*, individually and in combination, it is respectfully submitted that this rejection should be withdrawn.

In the rationale for the rejection of claim 27 the Office action notes that this claim has similar elements to claim 1 and is rejected for the same reasons as stated for the rejection of claim. The Office action further acknowledges that *Van Gerrevink* does not explicitly disclose each interactive transaction includes receiving at least on packet for the system under test and sending at least one response packet in response to the received packet. The Office action then asserts that this element is found in *Beanland*. The Applicant interprets this rationale as asserting that *Van Gerrevink* teaches all of the elements of claim 27 with the exception of "each interactive transaction includes receiving at least on packet for the system under test and sending at least one response packet in response to the received packet" which is found in *Beanland*.

The Applicant notes that claim 27 recites "a controller coupled to the first means, the controller for changing quantity and quality of the network traffic simulated by the first means". This element is not found in claim 1, nor is this element discussed in the rationale for the rejection of claim 27 in the Office action. Thus the Office action is defective for failing to identify where this element may be found within the prior art references. However, the inter-departure queue 101 and stored stream definitions 230 of *Van Gerrevink*, in combination, apparently control the quantity and quality of network traffic generated by the traffic stream generator 103.

As discussed with respect to claim 1, the Applicant respectfully but emphatically disagrees with the Examiner's understanding of the teaching of *Van Gerrevink*. *Van Gerrevink* discloses sending TCP packets, but does not disclose "second means for generating stateful TCP connections across the communications network with the system under test" as recited in claim 27. Similarly, *Van Gerrevink* discloses "making real-time measurements", which falls far short of disclosing "third means for measuring performance of the system under test in supporting the stateful TCP connections from the second means in the presence of the simulated traffic on the communication network from the first means", as recited in claim 27.

The Applicant also disagrees with the Examiner's understanding of the teaching of *Beanland*. *Beanland*'s entire discussion of receiving and responding to received packets is a single sentence at col. 7, lines 52-57, as follows:

> The cells can contain real time data in that a processing element contained in the multiple stream traffic emulator 1 produces cell data as a function of conditions extant at the present 55 time. For example, a handshake protocol can be used to test the integrity of the link between the multiple stream traffic emulator 1 and the equipment under test 106.

While a "handshake" disclosed by *Beanland* necessarily involves the multiple stream traffic emulator sending a packet and receiving a response, it does not necessarily require the multiple stream traffic emulator "sending at least one response packet in response to the received packet" as recited in claim 27. For example, the "handshake protocol" may be the well-known ICMP "ping" function. Further, *Beanland* only describes a handshake protocol used to test the integrity of the link between the traffic emulator and the equipment under test. Only one such integrity test would be required. Clearly, *Beanland* falls far short of disclosing "each (every) interactive transaction including receiving at least one packet from the system under test and sending at least one response packet in response to the received packet" as recited in claim 27.

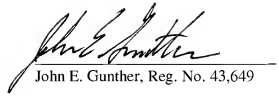
Since *Van Gerrevink* and *Beanland*, individually and in combination, fail to teach or suggest at least three elements of independent claim 27, it is respectfully submitted that claim 27 and depending claim 28-34 are allowable. Withdrawal of the rejection is solicited.

CONCLUSION AND RELIEF

In view of the foregoing, it is believed that all appealed claims patentably define the subject invention over the prior art of record and are in condition for allowance. The undersigned requests that the Board overturn the rejection of all claims and hold that all of the appealed claims of the above referenced application are allowable.

Respectfully submitted,

Date: July 14, 2011



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(viii) CLAIMS APPENDIX

The claims involved in this Appeal are as follows:

Listing of Claims:

1. (Previously presented) A method of testing real-world performance of a system under test coupled to a communications network, the method comprising

coupling a device to the communications network, the device comprising a chassis and one or more adapter cards, the adapter cards comprising hardware and software

the device setting up for simulation of a realistic mix of network traffic on the communications network

the device simulating the realistic mix of network traffic on the communications network

the device setting up for engaging in stateful TCP connections with the system under test

the device engaging in stateful TCP connections with the system under test concurrently with the step of simulating the realistic mix of network traffic on the communications network, resulting in additional network traffic on the communications network

the device measuring performance of the system under test for the stateful TCP connections under load of the simulated network traffic from the device.

2. (Previously presented) The method of testing real-world performance of a system under test of claim 1, wherein

the system under test comprises an application, the application operative on a server, the application for providing user-level interaction with plural client computers on the communications network.

3. (Previously presented) The method of testing real-world performance of a system under test of claim 1, wherein the system under test comprises a server load balancer.

4. (Previously presented) The method of testing real-world performance of a system under test of claim 1, wherein the system under test comprises a stateful network communications device.

5. (Cancelled)

6. (Previously presented) The method of testing real-world performance of a system under test of claim 1, wherein the simulated network traffic is generated by a stateless packet processor.

7. (Original) The method of testing real-world performance of a system under test of claim 1, wherein the system under test comprises a stateful application which uses underlying services of TCP.

8. (Original) The method of testing real-world performance of a system under test of claim 7, wherein the system under test comprises an HTTP server.

9. (Original) The method of testing real-world performance of a system under test of claim 7, wherein the system under test comprises an FTP server.

10. (Previously presented) The method of testing real-world performance of a system under test of claim 1 further comprising

modifying a behavior of the network traffic simulated by the device

continuing to engage in stateful TCP connections with the system under test

continuing to measure performance of the system under test for the stateful TCP connections.

11. (Previously presented) The method of testing real-world performance of a system under test of claim 10, the modifying step comprising using performance metrics based on the stateful TCP connections to modify the behavior of the simulated network traffic to more closely simulate a realistic mix of network traffic.

12. (Original) The method of testing real-world performance of a system under test of claim 11 wherein the performance metrics are selected from the group consisting of retransmission rate, fragmentation, packet sizes, and drop/reset rates.

13. (Original) The method of testing real-world performance of a system under test of claim 10, the modifying step comprising a user using a control program to change the behavior of the simulated network traffic via a system interface.

14. (Previously presented) The method of testing real-world performance of a system under test of claim 13, the modifying step comprising the user managing multiple ports in a coordinated fashion.

15. (Previously presented) An apparatus for testing real-world performance of a system under test coupled to a communications network, the apparatus comprising

a chassis

one or more adapter cards disposed in the chassis, the adapter cards comprising hardware and software, the hardware and software for

setting up for simulation of a realistic mix of network traffic on the communications network

simulating the realistic mix of network traffic on the communications network

setting up for engaging in stateful TCP connections with the system under test

engaging in stateful TCP connections with the system under test concurrently with simulating the realistic mix of network traffic on the communications network, resulting in additional network traffic on the communications network

measuring performance of the system under test for the stateful TCP connections under load of the simulated network traffic.

16. (Original) The apparatus for testing real-world performance of a system under test of claim 15 wherein the adapter cards include a stateless packet processor for simulating the realistic mix of network traffic on the communications network.

17. (Original) The apparatus for testing real-world performance of a system under test of claim 15 further comprising hardware and software for modifying a behavior of the simulated network traffic.

18. (Previously presented) The apparatus for testing real-world performance of a system under test of claim 17, further comprising hardware and software for using performance metrics for the stateful TCP connections to modify the behavior of the simulated network traffic to more closely simulate a realistic mix of network traffic.

19. (Original) The apparatus for testing real-world performance of a system under test of claim 18 wherein the performance metrics are selected from the group consisting of retransmission rate, fragmentation, packet sizes, and drop/reset rates.

20. (Original) The apparatus for testing real-world performance of a system under test of claim 15 further comprising hardware and software for changing a behavior of the simulated network traffic in response to user instructions.

21. (Previously presented) An apparatus for testing real-world performance of a system under test coupled to a communications network, the apparatus comprising

a chassis

one or more cards disposed in the chassis, the adapter cards comprising

a programmable stateless packet processor to simulate a realistic mix of network traffic on the communications network

a processor executing a TCP application for engaging in stateful TCP connections with the system under test concurrently with simulating the realistic mix of network traffic on the communications network, resulting in additional network traffic on the communications network

means for measuring performance metrics of the system under test for the stateful TCP connections under load of the simulated realistic mix of network traffic.

22. (Cancelled)

23. (Previously presented) The apparatus for testing real-world performance of a system under test of claim 21, further comprising a controller to instruct the programmable stateless packet processor to modify a behavior of the simulated network traffic.

24. (Previously presented) The apparatus for testing real-world performance of a system under test of claim 23, the wherein the controller instructs the programmable stateless packet processor to modify the behavior of the simulated network traffic to more closely simulate a realistic mix of network traffic based on the performance metrics.

25. (Original) The apparatus for testing real-world performance of a system under test of claim 24 wherein the performance metrics are selected from the group consisting of retransmission rate, fragmentation, packet sizes, and drop/reset rates.

26. (Previously presented) The apparatus for testing real-world performance of a system under test of claim 23, wherein the controller instructs the programmable stateless packet processor to modify a behavior of the simulated network traffic in response to user instructions.

27. (Previously presented) An enterprise load system for testing a system under test available on a communications network, the enterprise load system comprising:

first means for simulating real-world network traffic on the communications network

second means for generating stateful TCP connections across the communications network with the system under test, each interactive transaction including receiving at least one packet from the system under test and sending at least one response packet in response to the received packet

third means for measuring performance of the system under test in supporting the stateful TCP connections from the second means in the presence of the simulated traffic on the communication network from the first means

a controller coupled to the first means, the controller for changing quantity and quality of the network traffic simulated by the first means

wherein the first means, the second means and the third means operate concurrently.

28. (Original) The enterprise load system for testing a system under test available on a communications network of claim 27, wherein the first means is a stateless packet processor.

29. (Previously presented) The enterprise load system for testing a system under test available on a communications network of claim 27, wherein the system under test comprises a stateful system under test which uses underlying services of TCP.

30. (Original) The enterprise load system for testing a system under test available on a communications network of claim 29, wherein the system under test comprises an HTTP server.

31. (Original) The enterprise load system for testing a system under test available on a communications network of claim 29, wherein the system under test software system comprises an FTP server.

32. (Previously presented) The enterprise load system for testing a system under test available on a communications network of claim 27, the controller further for using performance metrics measured by the third means to cause the first means to more closely simulate a realistic mix of network traffic.

33. (Original) The enterprise load system for testing a system under test available on a communications network of claim 32 wherein the performance metrics are selected from the group consisting of retransmission rate, fragmentation, packet sizes, and drop/reset rates.

34. (Original) The enterprise load system for testing a system under test available on a communications network of claim 27 wherein the controller is responsive to instructions directed to the enterprise load system for changing a behavior of the simulated network traffic.

35. (Currently amended) A method of testing a system under test available on a communications network, the method comprising:

simulating real-world network traffic on the communications network

generating stateful TCP connections across the communications network with the system under test

measuring performance metrics of the system under test in supporting the stateful TCP connections in the presence of the simulated real-world network traffic

changing quantity and quality of the simulated real-world network traffic

wherein the steps of simulating, generating and measuring are performed concurrently.

36. (Cancelled)

37. (Original) The method of testing a system under test available on a communications network of claim 35, wherein the simulated network traffic is generated by a stateless packet processor.

38. (Original) The method of testing a system under test available on a communications network of claim 35, wherein the system under test comprises a stateful application which uses underlying services of TCP.

39. (Previously presented) The method of testing a system under test available on a communications network of claim 38, wherein the system under test comprises an HTTP server.

40. (Original) The method of testing a system under test available on a communications network of claim 38, wherein the system under test comprises an FTP server.

41. (Previously presented) The method of testing a system under test available on a communications network of claim 35 further comprising

modifying a behavior of the simulated network traffic

continuing to generate interactive transactions with the system under test software system

continuing to measure performance of the system under test.

42. (Previously presented) The method of testing a system under test available on a communications network of claim 41, the modifying step comprising using the performance metrics to modify the behavior of the simulated network traffic to more closely simulate a realistic mix of network traffic.

43. (Original) The method of testing a system under test of claim 42 wherein the performance metrics are selected from the group consisting of retransmission rate, fragmentation, packet sizes, and drop/reset rates.

44. (Original) The method of testing a system under test available on a communications network of claim 41, the modifying step comprising a user using a control program to change the behavior of the simulated network traffic via a system interface.

45. (Previously presented) The method of testing a system under test available on a communications network of claim 44, the modifying step comprising the user managing multiple ports in a coordinated fashion.

(ix) EVIDENCE APPENDIX

No evidence has been submitted pursuant to §§ 1.130, 1.131, or 1.132 of this title. No other evidence has been entered by the examiner and relied upon by appellant in the appeal.

(x) RELATED PROCEEDINGS APPENDIX

None.